United Nations ST/SG/AC.10/C.3/104

Secretariat

Distr.: General
15 January 2018

Original: English

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Report of the Sub-Committee of Experts on the Transport of Dangerous Goods on its fifty-second session

held in Geneva from 27 November to 6 December 2017

Contents

		Paragraphs	*Page*
I.	Attendance	1-6	5
II.	Administrative matters	7-9	5
III.	Adoption of the agenda (agenda item 1)	10	6
IV	Explosives and related matters (agenda item 2)	11-13	6
	Report of the Working Group on Explosives	13	6
	A. Review of Test Series 6	14-15	6
	B. Review of tests in parts I, II and III of the Manual of Tests and Criteria	16	7
	C. Electronic detonators	17	7
	D. Guidance for application of Test Series 3 and 4	18	7
	E. Stability tests for industrial nitrocellulose	19-22	7
	F. Application of security provisions to explosives N.O.S.	23	8
	G. Review of packing instructions for explosives	24	8
	H. Classification of articles under UN No. 0349	25	8
	I. Review of Chapter 2.1 of the GHS	26-30	8
	J. Miscellaneous	31-41	9
	1. Transport of controlled shipments of small quantities of explosives	31-32	9
	2. Transport of energetic samples for further testing	33	9
	3. UN No. 0222 Ammonium nitrate	34	10

GE.18-00600(E)

1800600

Please recycle

	4. Proposal to create a new UN number for mines with bursting charge 1.6D	35	10
	5. Extension of the default fireworks classification table for UN No 0431 (Articles pyrotechnic)	36	10
	6. Safety devices (UN No. 3268)	37-39	10
	7. Classification of desensitized explosives for the purposes of supply and use according to Chapter 2.17 of the GHS	40-41	11
V.	Listing, classification and packing (agenda item 3)	42-52	11
	A. Extension of the name and description of UN No. 2990 LIFE-SAVING APPLICANCES, SELF-INFLATING, Class 9	42-43	11
	B. New entry for UN No. 1390 ALKALI METAL AMIDES, packing group I	44-45	11
	C. Assignment of packing groups for Division 6.2 (infectious substances)	46	12
	D. Polymerizing substances UN Nos. 2522 and 2383	47	12
	E. Application of packing instruction P003 to large articles	48	12
	F. Multiple marking of packagings, including IBCs and large packagings, indicating conformity with more than one successfully tested design type	49	12
	G. Proposal to create UN numbers for pyrophoric gases and add criteria for pyrophoric gases in division 2.1	50-51	12
	H. Review of packing instruction P801	52	13
VI.	Electric storage systems (agenda item 4)	53-64	13
	A. Testing of lithium batteries	53-55	13
	B. Hazard-based system for classification of lithium batteries	56	13
	C. Transport provisions	57	14
	D. Damaged or defective lithium batteries	58-61	14
	E. Sodium-ion batteries	62	14
	F. Miscellaneous	63-64	14
	Parties required to make available the lithium cell and battery test summary	63-64	14
VII.	Transport of gases (agenda item 5)	65-68	15
	A. Global recognition of UN and non-UN pressure receptacles	65	15
	B. Miscellaneous	66-68	15
	1. Provisions for closures of pressure receptacles	66	15
	2. Transport of fuel gas containment systems – addition of SP 392 to the dangerous goods list entries for gases of Division 2.2	67-68	15
VIII.	Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 6)	69-84	15
	A. Marking and labelling	69	15
	Size of the marking of the UN number on packages	69	15
	B. Packagings	70-74	16

	1.	Drop test for IBCs, large plastic packagings or packagings containing inner plastic packagings/receptacles – conditioning duration at -18° C.	70	16
	2.	Routine maintenance of rigid IBCs	71	16
	3.	Additional marking of the maximum stacking load of IBCs	72-73	16
	4.	Use of packagings approved for liquids to transport solid dangerous goods	74	16
C.		Portable tanks	75-82	16
	1.	Inspection of pressure-relief devices	75-76	16
	2.	Impact testing of portable tanks and MEGCs: proposal to revise section 41 of the Manual of Tests and Criteria	77	17
	3.	Minimum shell thickness for portable tanks used for the carriage of non-refrigerated liquefied gases	78	17
	4.	Clarification of special provision TP19	79	17
	5.	Fibre-reinforced plastics portable tanks (FRP)	80-81	17
	6.	Provisions concerning holding time information in the transport document	82	18
D.		Other miscellaneous proposals	83-84	18
	1.	Corrections to label models Nos. 7A, 7B and 7C in 5.2.2.2.2	83	18
	2.	Proposal of amendments to section 5.5.3	84	18
IX.		Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 7)	85-92	18
	1.	Recommendations made by the ICAO Dangerous Goods Panel	85-86	18
	2.	Activities of IMO (Sub-Committee on Carriage of Cargoes and Containers CCC4) and the Editorial and Technical Group (E&T 28)	87	19
	3.	Editorial corrections to the twentieth revised edition of the Model Regulations	88-89	19
	4.	Name and description of UN 3363	90-92	19
X.		Cooperation with the International Atomic Energy Agency (agenda item 8)	93	20
XI.		Guiding principles for the Model regulations (agenda item 9)	94	20
XII.		Issues related to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (agenda item 10)	95-99	20
A.		Criteria for water-reactivity	95	20
B.		Testing of oxidizing substances	96	20
C.		Updating of references to OECD Guidelines	97	20
D.		Use of the Manual of Tests and Criteria in the context of the GHS	98	20
E.		Miscellaneous	99	21
XIII.		Other business (agenda item 11)	100-102	21
		Scope of section 1.1.1.2 of the Model Regulations	100	21

	Tribute to Mr. O. Kervella (Secretariat); Mr. J. Mayers (United Kingdom) and Ms TJ Ness (Norway)	101-102	21
XIV.	Adoption of the report (agenda item 12)	103	21

Annexes

I. Corrections to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.20)*

II. Draft amendments to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.20)*

III. Draft amendments to the sixth revised edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.6) (as amended in accordance with ST/SG/AC.10/44/Add.2)*

* For practical reasons, this annex has been published in an addendum to this report (ST/SG/AC.10/C.3/104/Add.1).

I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fifty-second session from 27 November to 6 December 2017, with Mr. D. Pfund (United States of America) as Chair and Mr. C. Pfauvadel (France) as Vice-Chair.

2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Poland, Portugal, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, Switzerland, United Kingdom and United States of America.

3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from Qatar, Romania and Slovakia also took part.

4. Representatives of the European Union and the Intergovernmental Organization for International Carriage by Rail (OTIF) also attended.

5. Representatives of the Food and Agriculture Organization (FAO), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) and the World Health Organization (WHO) were also present.

6. Representatives of the following non-governmental organizations took part in the discussion on items of concern to those organizations: Association of European Manufacturers of Sporting Ammunition (AFEMS); Australian Explosives Industry Safety Group (AEISG); Compressed Gas Association (CGA); Cosmetics Europe: Council on Safe Transportation of Hazardous Articles (COSTHA); Dangerous Goods Advisory Council (DGAC); Dangerous Goods Trainers Association (DGTA); European Association for Advanced Rechargeable Batteries (RECHARGE); European Chemical Industry Council (CEFIC); International Confederation of Plastics Packagings manufacturers (ICPP); European Industrial Gases Association (EIGA); Institute of Makers of Explosives (IME); International Air Transport Association (IATA); International Confederation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Confederation of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Dangerous Goods and Containers Association (IDGCA); International Fibre Drum Institute (IFDI); International Organization of Motor Vehicle Manufacturers (OICA); International Paint and Printing Ink Council (IPPIC); KiloFarad International (KFI); Medical Device Battery Transport Council (MDBTC); Rechargeable Battery Association (PRBA); and Sporting Arms and Ammunition Manufacturers' Institute (SAAMI).

II. Administrative matters

7. The Sub-Committee noted that, as had been announced at the previous session (ST/SG/AC.10/C.3/102, paras. 99-102), the secretary would be retiring on 30 November. It also noted that the Chair, the Vice-Chair and several delegations had written to the Executive Secretary of the United Nations Economic Commission for Europe to ask for General Assembly resolution 70/244 to be applied, to allow the secretary to retire at the age of 65. The letters drew attention to the particularly heavy workload of the Dangerous Goods and Special Cargoes Section during the current crucial period of the biennium and the particularly negative consequences that would ensue from the post being vacant over the coming months. The Sub-Committee regretted the lack of any response to the letters.

8. The Sub-Committee noted that, as had been stated at the previous session, a vacancy announcement for the post of head of section had been published in the summer and candidacies had been received by the closing date of 16 September 2017. However, the recruitment procedure had been suspended pending the arrival of Mr. Yuwei Li (China), the new director of the Sustainable Transport Division, in February 2018. The Sub-Committee considered that the post should not remain vacant and, since there was a budget, asked for it to be filled immediately on a temporary basis, in compliance with the administrative regulations, either by extending the contract of the present incumbent for the period in question, or by temporarily appointing another competent officer. It also thanked the staff of the section for having volunteered to avoid any disruption resulting from the retirement of the head of section during the current session.

9. The Sub-Committee also noted that the P2 post in the section, which had been vacant since November 2015, had still not been filled with a regular member of staff and that the person who was in the post temporarily could not remain after 5 February 2018 for administrative reasons. The Sub-Committee asked the secretariat to take appropriate action to ensure that the post was filled with a qualified staff member after that date.

III. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/103 (Provisional agenda)
ST/SG/AC.10/C.3/103/Add.1 (List of documents).

Informal documents: INF.1 and INF.2 (List of documents)
INF.19 (Provisional timetable)
INF.30 (Reception organized by NGOs)

10. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of the informal documents INF.1 to INF.61.

IV. Explosives and related matters (agenda item 2)

11. Following preliminary consideration in the plenary session, most issues related to the agenda item were referred to the Working Group on Explosives, which met from 27 November to 1 December 2017, with Mr. E. de Jong (Netherlands) as Chair.

12. Informal documents INF.3 and Add.1-2, INF.13 and INF.28 on the Use of the Manual of Tests and Criteria in the context of GHS under agenda item 10, as well as INF.32 on safety devices, under agenda item 3, were also referred to the Working Group on Explosives.

Report of the Working Group on Explosives

Informal document: INF.53 and Add.1-2 (Chairman of the Working Group)

13. Having considered the report of the Working Group on Explosives presented by its chairman, the Sub-Committee noted the conclusions listed below for each subject under consideration under agenda item 2.

A. Review of Test Series 6

Document: ST/SG/AC.10/C.3/2017/50 (SAAMI)

Informal document: INF.53 (Chairman of the Working Group)

14. The Sub-Committee noted that the Working Group supported in principle the review of the disruption criterion for the 6 (d) test as well as the other 6 (d) acceptance criteria, to remove or minimize subjectivity. It was suggested that a definition of "hazardous effects" could be beneficial in such a review.

15. The Sub-Committee noted that the representative of SAAMI would consider the comments made by the Working Group and might return with a revised proposal for the next session.

B. Review of tests in parts I, II and III of the Manual of Tests and Criteria

16. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

C. Electronic detonators

17. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

D. Guidance for the application of Tests Series 3 and 4

18. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

E. Stability tests for industrial cellulose

Document: ST/SG/AC.10/C.3/2017/35 (Germany)

Informal documents: INF.6 (CEFIC)
INF.53 (Chairman of the Working Group)

19. The Sub-Committee noted that the Working Group had generally agreed with the proposed test descriptions in informal document INF.6 and noted that the texts needed further refinement. It also noted that to address the concerns expressed about implementation for Class 1 nitrocellulose *versus* Division 4.1 nitrocellulose, the Working Group had considered and provisionally agreed on the text of two new special provisions (one for Class 1 entries and another one for Division 4.1 entries).

20. The Sub-Committee also noted that, in response to a question raised by the expert from China, the Working Group had concluded that no special provision was needed for UN No. 2059, since the starting material used to prepare such solutions was already subject to the special provisions and tests could not be performed on the solutions themselves.

21. As regards the possible need for transitional provisions, the Sub-Committee noted that the Working Group had concluded that since the current 75°C thermal stability test was not predictive enough for long term stability, no transitional provision was required.

22. The Sub-Committee finally noted that a revised proposal would be submitted for the next session. The representative of CEFIC and the expert from Germany invited other interested experts to submit their comments to them before 1 February 2018.

F. Application for security provisions to explosives N.O.S.

Document: ST/SG/AC.10/C.3/2017/47 (United Kingdom)

Informal document: INF.53 (Chairman of the Working Group)

23. Noting that the Working Group had unanimously supported the proposal in document ST/SG/AC.10/C.3/2017/47, the Sub-Committee decided to adopt the amendment to table 1.4.1 as proposed (see annex II).

G. Review of packing instructions for explosives

Document: ST/SG/AC.10/C.3/2017/48 (United Kingdom)

Informal documents: INF.40 (Canada)
INF.53 (Chairman of the Working Group)

24. The Sub-Committee noted that the Working Group could not reach consensus on the proposals in ST/SG/AC.10/C.3/2017/48 and in informal document INF.40, although there was some support for both. The Sub-Committee was informed that the expert from the United Kingdom would consider the comments made by the Working Group and might return with a revised proposal for the next session.

H. Classification of articles under UN No. 0349

25. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

I. Review of Chapter 2.1 of the GHS

Informal documents: INF.20 (Sweden)
INF.53 (Chairman of the Working Group)
INF.57 (Sweden)

26. The Sub-Committee noted that the Working Group had discussed the two different proposed schemes for classification of explosives as reflected in the annexes of INF.20, during an informal session held on Thursday 30 December.

27. The outcome of subsequent discussions involving the informal correspondence group on the revision of Chapter 2.1 of the GHS was a tentatively single classification system and criteria as described in informal document INF.57.

28. The representative of SAAMI explained that the idea to group most divisions into a single sub-category in the GHS was intended for hazard communication purposes, and that consideration should be given to address potential unintended consequences.

29. The Sub-Committee noted that the outcome of the discussions of the Working Group and the informal correspondence group on the revision of Chapter 2.1 would be considered by the GHS Sub-Committee at its thirty-fourth session (refer to ST/SG/AC.10/C.4/68, paragraphs 14 to 19).

30. The Sub-Committee considered that it would be appropriate to discuss this item jointly with the GHS Sub-Committee during a joint meeting of the TDG and GHS sub-committees in July 2018. Subject to the agreement of the GHS Sub-Committee to this proposal, the date, the time needed and the topics to be discussed at the joint session could

be decided by the officers of both sub-committees after the deadline for submission of documents (see also the report of the GHS Sub-Committee on its thirty-fourth session, document ST/SG/AC.10/C.4/68, paragraph 62).

J. Miscellaneous

1. Transport of controlled shipments of small quantities of explosives

Document: ST/SG/AC.10/C.3/2017/51 (SAAMI)

Informal document: INF.53 (Chairman of the Working Group)

31. The Sub-Committee noted that the Working Group had agreed that the shipping methods proposed by SAAMI would apply only for transport of small quantities of substances and that articles might be considered at a later stage. The Sub-Committee also noted that, the Working Group:

(a) generally agreed that the proposed shipping methods would be valuable for those involved in international round robin testing, that their adoption into the Model Regulations was desirable and that they would provide a safe way to transport as yet unclassified explosives for testing and product development;

(b) had identified the following two implementation options: creating new UN number entries as proposed by SAAMI or assigning a special provision to UN No. 0190 allowing use without competent authority approval of the substances shipped;

(c) had agreed that the competent authority approval should be required for the pipe as an article, but not for each of the specific substances contained therein. This would minimize the need for competent authorities to be involved but would help to document authorized users;

(d) considered that to avoid confusion with UN No. 0190, the term "sample" should be avoided and that either "not fully classified" or "not yet classified" should be used instead (e.g. "explosive, not fully classified"); and

(e) had considered whether the classification should be 1.4E, as in the United States of America special permits mentioned in document ST/SG/AC.10/C.3/2017/51, or 1.4S, given that there were no hazardous effects outside of the package.

32. The Sub-Committee noted that the representative of SAAMI would submit a revised proposal for the next session to take account of the comments made.

2. Transport of energetic samples for further testing

Informal documents: INF.12 (CEFIC)
INF.53 (Chairman of the Working Group)

33. The Sub-Committee noted that, following the discussion and the comments made by the Working Group, the representative of CEFIC would prepare an overview of how self-reactives are classified and explain how the proposal would address sections 3.3 (c) and 5.1 (b) of Appendix 6 of the Manual of Tests and Criteria, for review by the Working Group intersessionally.

3. UN No. 0222 Ammonium nitrate

Informal documents: INF.15 (IME)
INF.53 (Chairman of the Working Group)

34. The Sub-Committee noted that the Working Group considered that the entry for UN No. 0222 should not be removed from the dangerous goods list, on the grounds that although no ammonium nitrate was manufactured for inclusion in UN No. 0222, the entry is used for special purposes, e.g. transport of contaminated ammonium nitrate, ammonium nitrate of unknown classification, and fertilizers that fail Test Series 2. It was also noted that in light of the comments made, the representative of IME would not pursue this issue further.

4. Proposal to create a new UN number for mines with bursting charge 1.6D

Informal documents: INF.21 (Finland)
INF.53 (Chairman of the Working Group)

35. The Sub-Committee noted that the Working Group confirmed that if the articles described in informal document INF.21 meet Test Series 7 criteria they could be classified under UN No. 0486, 1.6N. Therefore there was no need to develop a specific entry in the dangerous goods list for this purpose. It was the view of the Working Group that P101 does not exclude the possibility for unpackaged transport.

5. Extension of the default fireworks classification table for UN No. 0431 (Articles, pyrotechnic)

Informal documents: INF.33 (United States of America)
INF.53 (Chairman of the Working Group)

36. The Sub-Committee noted that although there was some sympathy within the Working Group for the proposal, experts considered that its scope should be limited to those pyrotechnic articles that are similar to and meet the criteria of those fireworks in the default table, as they felt that the current proposal was too broad and would allow for inappropriate classification of certain pyrotechnic articles.

6. Safety devices (UN No. 3268)

Informal document: INF.32 (COSTHA)

37. There were divergent views on the applicability of UN No. 3268 to micro-gas generators. Some experts noted that these generators could be used in safety devices other than those specifically mentioned in special provision 280 and therefore should not be transported under UN No. 3268. Others expressed the view that a gas generating component for a safety related function as described in special provision 280 would be covered by the current entry. Additionally, some experts considered that UN No. 3268 should be assigned on the basis of the characteristics of the safety device only, irrespective of its intended location (a vehicle, a building, etc).

38. The Sub-Committee agreed that the provisions for safety devices currently in the Model Regulations had been initially developed to address only those intended for vehicles, vessels, aircrafts or their completed components.

39. The representative of COSTHA said that he would submit a document to the next session including safety data for micro-gas generators to address some of the questions raised and allow the Sub-Committee to take an informed decision.

7. Classification of desensitized explosives for the purposes of supply and use according to Chapter 2.17 of the GHS

Informal documents: INF.7 (CEFIC)
INF.14 (SAAMI)
INF.53 (Chairman of the Working Group)

40. The Sub-Committee noted that the Working Group had agreed that classification based on existing test data was desirable in lieu of performing tests. It also noted that the Working Group had discussed the need for a more detailed description of the steel drum packaging to which the data applies and noted the information from the expert from Sweden about some discrepancies between the results contained in informal document INF.7 and those in Section 51, paragraph 51.4.5.1, of the Manual of Tests and Criteria.

41. The Sub-Committee noted that the representative of CEFIC would check the discrepancies notified during the discussion and that the representatives of CEFIC and SAAMI would submit revised proposals to the next session, taking account of the comments made.

V. Listing, classification and packing (agenda item 3)

A. Extension of the name and description of UN No. 2990 LIFE-SAVING APPLIANCES, SELF-INFLATING, Class 9

Document: ST/SG/AC.10/C.3/2017/29 (Germany)

42. Some experts were in favour of the proposal to extend the name and description of UN No. 2990 to include self-inflating recovery devices and make a consequential amendment to special provision 296. However the majority believed that the life-saving appliances entry should remain limited to appliances performing a life-saving function.

43. The expert from Germany withdrew her proposal, saying that she would submit another one with more information. Those experts who thought that the matter could be dealt with differently were asked to forward their suggestions to her in writing.

B. New entry for UN No. 1390 ALKALI METAL AMIDES, packing group I

Document: ST/SG/AC.10/C.3/2017/38 (Germany)

44. The Sub-Committee adopted the proposal to add an entry for packing group I (see annex II). The expert from the United States of America suggested that an entry for packing group III would also be useful. He said that he would submit a proposal in that regard.

45. The expert from China indicated that a Class 8 subsidiary hazard should also be considered because of the pH14. The Sub-Committee considered that a decision could not be taken on that matter until the relevant data had been presented. If the criteria of class 8 were met, the precedence of hazards table should be taken into account.

C. Assignment of packing groups for Division 6.2 (infectious substances)

Document: ST/SG/AC.10/C.3/2017/42 (Canada)

46. The proposal not to indicate packing group II in column (5) for UN No. 3291 was adopted in order to ensure consistency with the general principle set out in 2.0.1.3 on the understanding that the packaging should remain subject to the performance requirements laid down for packing group II as indicated in packing instructions P621, IBC620 and LP621 (see annex II).

D. Polymerizing substances UN Nos. 2522 and 2383

Informal document: INF.5 (Germany, DGAC and CEFIC)

47. The proposed amendments relating to those UN numbers were adopted in square brackets for confirmation at the next session (see annex II).

E. Application of packing instruction P003 to large articles

Document: ST/SG/AC.10/C.3/2017/32 (Germany)

Informal document: INF.47 (Germany)

48. After a plenary discussion, the expert from Germany proposed two options in informal document INF.47 and the Sub-Committee adopted an amendment to provision PP32, as proposed in the first option (see annex II).

F. Multiple marking of packagings, including IBCs and large packagings, indicating conformity with more than one successfully tested design type

Document: ST/SG/AC.10/C.3/2017/36 (CEFIC, DGAC)

Informal documents: INF.23 (ICIBCA)
INF.51 (CEFIC, DGAC)
INF.45 (ICCR)

49. The Sub-Committee agreed in principle to the proposals in paragraph 3 of informal document INF.51 (see annex II) and noted that CEFIC and DGAC intended to submit a proposal to the next session to address the remaining issue of multiple approvals for packages simultaneously conforming to different design types and categories.

G. Proposal to create UN numbers for pyrophoric gases and add criteria for pyrophoric gases in Division 2.1

Document: ST/SG/AC.10/C.3/2017/43 (CGA and EIGA)

50. Following an introduction in plenary session, there was general support for the proposal and the document was entrusted to a lunchtime working group.

51. The Sub-Committee noted that the representatives of CGA and EIGA would submit a revised proposal for the next session, which would take into account the comments and observations made.

H. Review of packing instruction P801

Document: ST/SG/AC.10/C.3/2017/44 (Canada)

Informal documents: INF.52 and INF.61 (Canada)

52. Following discussion in plenary session the expert from Canada submitted a revised proposal in informal document INF.61. However, in light of the oral comments made during its discussion in plenary, it could not be adopted. The Sub-Committee invited the expert from Canada to consider submitting a new revised proposal to the next session.

VI. Electric storage systems (agenda item 4)

A. Testing of lithium batteries

Informal document: INF.58 (MDBTC)

53. The Sub-Committee noted that due to the late submission of the document, experts had not had sufficient time to consider in detail the interpretations given in informal document INF.58. However, it agreed to provide some initial feedback to the representative of MDBTC, as follows:

(a) It is acceptable to provide a single test summary addressing multiple batteries, manufacturers or products, provided the required information remains available and accessible at any time;

(b) It should always be possible to identify the test laboratory which has performed a given test;

(c) "Physical description of a cell or battery" means a description allowing their identification when installed in different products;

(d) There is no requirement to release confidential business information in the test summary report, as long as all the test summary information is provided.

54. The representative of PRBA said that he would submit a document for the next session with examples on how to address protection of confidential business information.

55. On the question raised by the representative of IATA on paragraph 6 of informal document INF.39 (see paragraphs 63 and 64 of this report), the Sub-Committee confirmed that the provisions of the Model Regulations apply to dangerous goods, in this case lithium batteries. Therefore, the text of 2.9.4 (g) reflects the test summary requirement as applied to lithium cells or batteries. It was noted that this requirement includes cells or batteries when installed in products. It was further agreed that the provisions of 2.9.4 (g) could be met by the cell or battery manufacturer or the product manufacturer, and that 38.3.5 of the Manual of Tests and Criteria ensured that the cell, battery or product manufacturer taking responsibility for conformance with 2.9.4 (g) is readily identified in the test summary.

B. Hazard-based system for classification of lithium batteries

Informal document: INF.59 (France on behalf of the informal working group)

56. The Sub-Committee noted that the informal working group would continue to analyse the data received and that it intended to start the development of a testing scheme. The expert from France encouraged other experts to provide additional data to the informal working group.

C. Transport provisions

Harmonization of the proper shipping names of UN Nos. 3481 and 3091

Document: ST/SG/AC.10/C.3/2017/39 (RECHARGE, PRBA)

57. The Sub-Committee supported in principle the proposal to simplify the provisions applicable to lithium ion and lithium metal batteries packed with or contained in equipment (UN Nos. 3841 and 3091) but considered that it should be further refined before it could be considered for adoption. The representatives of RECHARGE and PRBA said that they would submit a revised proposal to the next session to take account of the various comments made.

D. Damaged or defective lithium cells and batteries

Document: ST/SG/AC.10/C.3/2017/49 (RECHARGE, PRBA)

58. The Sub-Committee did not support the proposal in document ST/SG/AC.10/C.3/2017/49.

59. Most experts were of the view that assessment in accordance with special provision 376 does not require retesting in accordance with 38.3 to evaluate the damage or defect.

60. However, some experts recognised that it would be useful to reflect that interpretation in the Model Regulations, as well as to further clarify the applicable transport conditions for used, damaged or defective lithium cells or batteries (e.g. applicability of packing instructions P908, P911 or need for competent authority approval).

61. After discussion, the representative of PRBA withdrew the proposal and said that he would submit a revised one for the next session, based on the comments made.

E. Sodium-ion batteries

Document: ST/SG/AC.10/C.3/2017/37 (United Kingdom)

Informal document: INF.11 (United Kingdom)

62. The Sub-Committee agreed that provisions to address safe transport of sodium-ion batteries should be developed but considered that more information was needed before a decision on how to address these batteries in the Model Regulations could be taken (e.g. state of charge during transport, applicable test methods, chemical hazards, thermal runaway conditions, etc.). The expert from the United Kingdom welcomed the feedback received from the Sub-Committee and said that he would submit a document to the next session providing additional information to address the comments made.

F. Miscellaneous

Parties required to make available the lithium cell and battery test summary

Informal document: INF.39 (IATA)

63. The Sub-Committee confirmed that the difference between the current text of 2.9.4 (g) in the Model Regulations and paragraph 38.3.5 (a) and (b) of the Manual of Tests and Criteria, as regards the reference to "manufacturers and subsequent distributors" and "product manufacturer of devices" respectively, was intended. It was noted that product

manufacturers of devices or equipment could be considered as "subsequent distributors" and that other parties could be covered by this concept as well.

64. The representative of IATA said that he would reconsider his proposal in the light of the comments made and on the outcome of the discussions on informal document INF.58 (see paragraph 55 of this report).

VII. Transport of gases (agenda item 5)

A. Global recognition of UN and non-UN pressure receptacles

65. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

B. Miscellaneous

1. Provisions for closures of pressure receptacles

Informal document: INF.18 (CGA and EIGA)

66. The Sub-Committee noted that CGA and EIGA would continue their work on the matter through a correspondence group, and all parties interested in those discussions were invited to contact the representatives of CGA and EIGA.

2. Transport of fuel gas containment systems — addition of SP 392 to the dangerous goods list entries for gases of Division 2.2

Informal document: INF.31 (Germany)

67. The Sub-Committee noted that the RID/ADR/ADN Joint Meeting had decided to apply special provision 392 to containment systems for gases other than the flammable gases used for certain vehicles, by means of special provision 660 of RID/ADR/ADN.

68. The Sub-Committee adopted the proposal made by Germany by consensus, but decided on principle to put the amendments adopted in square brackets since the proposal had been made in an informal document (see annex II).

VIII. Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 6)

A. Marking and labelling

Size of the marking of the UN number on packages

Informal documents: INF.8 (IATA)
INF.37 (EIGA)

69. Most of the experts who took the floor were of the opinion that the amendments to 5.2.1.1 proposed by IATA would lead to problems of interpretation and so preferred to retain the current text, even though it was not perfect. The representative of IATA therefore withdrew the proposal.

B. Packagings

1. Drop test for IBCs, large plastic packagings or packagings containing inner plastic packagings/receptacles — conditioning duration at -18°C

Informal document: INF.16 (Belgium)

70. Some experts supported the proposal from Belgium to include a minimum of 24 hours conditioning, while others were not convinced of the need for such a provision. The expert from Belgium pointed out that the discussion showed that practice varied between countries, which could lead to differences in terms of safety. He said that he would raise the matter again at a future session.

2. Routine maintenance of rigid IBCs

Informal document: INF.17 (Belgium)

71. Several delegations agreed with the expert from Belgium that the cleaning of IBCs (part of regular maintenance as defined in 1.2.1) by a party other than the owner should not require marking. Opinions were divided, however, and not all the experts had had time to study the document, which had been submitted late. The expert from Belgium said that he would draw up an official proposal for the next session.

3. Additional marking of the maximum stacking load of IBCs

Document: ST/SG/AC.10/C.3/2017/31 (Germany)

Informal documents: INF.22 (ICPP)
INF.48 (Germany)

72. After discussing the proposal aimed at clarifying the provisions of 6.5.2.2.1 and 6.5.2.2.2 to highlight the fact that the marking of the maximum permitted stacking load should be included only in the pictogram, the Sub-Committee adopted the solution proposed in informal document INF.48, i.e., that the last line of the table in 6.5.2.2.1 and the footnote b to the table should be deleted (see annex II).

73. After discussion, the ICPP representative withdrew the amendment to the first sentence of 6.5.2.2.2 proposed in informal document INF.22. He said he would submit a new proposal to take account of the comments made.

4. Use of packagings approved for liquids to transport solid dangerous goods

Informal document: INF.34 (United States of America)

74. Most of the experts who spoke were not in favour of introducing provisions to allow the transport of solid substances in packagings that were only approved for the transport of liquid substances. They thought that the current provisions were adequate, as the packagings could be tested for the transport of liquid substances and for the transport of solid substances, in which case they could bear double markings.

C. Portable tanks

1. Inspection of pressure-relief devices

Document: ST/SG/AC.10/C.3/2017/30 (Germany)

Informal document: INF.38 (EIGA)

75. Several delegations thought that the proposal to extend the provisions on the inspection of pressure-relief devices on portable tanks for substances of Class 8 to tanks carrying substances with a Class 8 subsidiary hazard was logical. The representative of EIGA noted that, in the case of gases, it was not necessarily justified.

76. The expert from Germany said that she would submit a new proposal to take account of the comments made.

2. Impact testing of portable tanks and MEGCs: proposal to revise section 41 of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2017/41 (Canada)

77. The proposed amendments to section 41 of the Manual were adopted (see annex III). The Sub-Committee noted that Canada would propose the consequential amendments to ISO 1496-3.

3. Minimum shell thickness for portable tanks used for the carriage of non-refrigerated liquefied gases

Informal document: INF.25 (Belgium)

78. The Sub-Committee agreed in principle with the proposal of Belgium but requested that the proposal should be submitted as an official document at the next session.

4. Clarification of special provision TP19

Informal document: INF.26 (Belgium)

79. The representative of Belgium was requested to submit his proposal as an official document at the next session, taking into account the comments made.

5. Fibre-reinforced plastics portable tanks (FRP)

Document: ST/SG/AC.10/C.3/2017/40 (Russian Federation)

Informal documents: INF.4 (Russian Federation)
INF.36 (Finland)
INF.41 (IDGCA)
INF.44 and INF.46 (Russian Federation)
INF.55 (France)

80. The Sub-Committee supported in principle the proposal in document ST/SG/AC.10/C.3/2017/40. Several experts considered that given the technical nature and the number of questions to be addressed, the work should be entrusted to an inter-sessional informal working group. Following a proposal by the expert from France, a group of experts met during the break to prepare the draft terms of reference for the work, which were later considered and adopted by the Sub-Committee, as follows:

"Develop requirements for the construction, approval, inspection, and use of fibre reinforced plastics portable tanks taking into account:

(a) The evaluation of a performance equivalence with commonly used metal tanks, related *inter alia* to:

(i) stress and fatigue resistance;

(ii) chemical compatibility;

(iii) aging;

(iv) fire resistance;

(v) impact resistance;

(b) Different materials for fibres and resins including new technologies;

(c) Different manufacturing techniques and performance evaluation methods;

(d) Suitability for different classes of dangerous goods;

(e) Existing regulations at international (RID, ADR), regional or national level;

(f) Specific periodic inspection needs, including after repair, and unacceptable damage."

81. The expert from the United States of America volunteered to lead the inter-sessional correspondence working group. Experts interested in participating in the work were invited to contact him (steven.webb@dot.gov).

6. Provisions concerning holding time information in the transport document

Informal documents: INF.9 and INF.54 (Belgium)

82. There was general support for the proposal with some modifications. The Sub-Committee invited the expert from Belgium to take note of the comments made and to submit an official document for the next session.

D. Other miscellaneous proposals

1. Corrections to label models Nos. 7A, 7B and 7C in 5.2.2.2.2

Informal document: INF.24 (Switzerland)

83. The Sub-Committee noted that the errors mentioned were a result of the new presentation of the label models in a table, and approved the proposed corrections (see annex I).

2. Proposal of amendments to section 5.5.3

Document: ST/SG/AC.10/C.3/2017/46 (Russian Federation and Austria)

Informal documents: INF.50 and INF.50/Rev.1 (Secretariat)

84. The Sub-Committee adopted the proposal in document ST/SG/AC.10/C.3/2017/46, as amended in INF.50/Rev.1 (see annex II).

IX. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 7)

1. Recommendations made by the ICAO Dangerous Goods Panel

Informal document: INF.42 (ICAO)

85. The Sub-Committee noted the information provided by ICAO and invited the representative of that organization to submit an official document to the next session to reflect some of the suggested improvements to the Model Regulations, as appropriate.

86. The representative of Brazil highlighted the work related to training conducted within ICAO and suggested that similar activities should be included in the Sub-Committee's programme of work.

2. Activities of IMO (Sub-Committee on Carriage of Cargoes and Containers CCC 4) and the Editorial and Technical Group (E&T 28)

Informal document: INF.43 (IMO)

87. The Sub-Committee noted the information provided by IMO and considered that the amendments submitted in paragraphs 2 (a) and 2 (b) should give rise to corrections to the Model Regulations (see annex I).

3. Editorial corrections to the twentieth revised edition of the Model Regulations

Informal document: INF.49 (Germany)

88. Opinions were divided as regards the interpretation of the second sentence in sub-paragraph (c) of special provision 392 ("closing all openings" against "closing the valve controlling all openings"). The expert from Switzerland pointed out a discrepancy between the English and French versions in the current text and indicated that the correction proposed by Germany would align the two versions to refer to "closing all openings".

89. A member of the secretariat informed the Sub-Committee that the original proposal submitted to and adopted at the RID/ADR/ADN Joint Meeting referred to "closure of all openings". The Sub-Committee therefore decided to adopt the proposed corrections to SP392 (c), as amended (see annex I).

4. Name and description of UN No. 3363

Document: ST/SG/AC.10/C.3/2017/34 (Germany)

Informal documents: INF.27 (Switzerland)
INF.56 (Germany)

90. The Sub-Committee confirmed that articles (e.g. machinery, apparatus or devices) containing dangerous goods for which a proper shipping name exists in the dangerous goods list shall not be transported under UN No. 3363. Consequently, it also confirmed that articles of UN Nos. 3537 to 3547 did not need to be reclassified under UN No. 3363 when transported uncleaned or after being emptied, even if the quantity limits specified in column 7 (a) of the dangerous goods list for each of the dangerous goods contained was not exceeded. Some experts suggested that a note could be introduced in the Model Regulations to help users to select the appropriate entry. The expert from Switzerland said that he would take account of the comments made and consider submitting a revised proposal to the next session.

91. There were diverging views on the need for amendment to the name and description of UN No. 3363. Some experts considered that the current proper shipping name was well understood by users and that the proposed changes would create confusion. Some others were concerned by the introduction of the words "limited quantities" in the proper shipping name, as they considered that this could be misunderstood as a need to comply with the labelling provisions of Chapter 3.4 of the Model Regulations (e.g. LQ mark). Others on the contrary considered that replacing "machinery", "apparatus" and "devices " with "articles" or alternatively, including "articles" as part of the proper shipping name would make it easier to understand by users and would solve the inconsistencies raised by the expert from Germany.

92. The Sub-Committee finally adopted the proposal developed by a lunchtime working group led by the expert from Germany as contained in informal document INF.56 (see annex II).

X. Cooperation with the International Atomic Energy Agency (agenda item 8)

Document: ST/SG/AC.10/C.3/2017/33/Rev.1 (WNTI)

93. As the representative of WNTI could not attend the session, the Sub-Committee decided to defer the discussion on this issue to its next session.

XI. Guiding principles for the Model Regulations (agenda item 9)

94. As no document had been submitted under this agenda item, no discussion took place on this subject.

XII. Issues related to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (agenda item 10)

A. Criteria for water-reactivity

95. As no document had been submitted under this agenda item, no discussion took place on this subject.

B. Testing of oxidizing substances

Document: ST/SG/AC.10/C.3/2017/45 (France)

Informal document: INF.35 (France)

96. The Sub-Committee took note of the progress of work on the topic, including the intention of the expert from France to submit an official proposal at the next session of the TDG and GHS sub-committees. Experts who so wished were invited to transmit their comments to the expert from France so that they could be taken into account in the final proposal.

C. Updating of references to OECD Guidelines

97. As no document had been submitted under this agenda item, no discussion took place on this subject.

D. Use of the Manual of Tests and Criteria in the context of the GHS

Informal documents: INF.3 and Add.1 and 2 (Chairman of the Working Group)
INF.13 (AEISG)
INF.28 (SAAMI)
INF.53 and Add.1 and 2 (Chairman of the Working Group)

98. The Sub-Committee noted that the Working Group had completed the review of sections 1 and 10 of the Manual of Tests and Criteria (informal document INF.3 and Add.1), had not supported the proposals in informal document INF.13 and had adopted some of the proposals in informal document INF.28, with the remainder being withdrawn by SAAMI. It also noted that the amendments to the Manual of Tests and Criteria agreed by

the Working Group so far were contained in the addenda to the report of the Working Group (informal documents INF.53/Add.1 and 2) and that they would be submitted as an official proposal for the next session.

E. Miscellaneous

99. As no document had been submitted under this agenda item, no discussion took place on this subject.

XIII. Other business (agenda item 11)

Scope of section 1.1.1.2 of the Model Regulations

Informal documents: INF.29 and INF.60 (Netherlands)

100. The Sub-Committee noted the information provided in informal document INF.29 which was further discussed in an afternoon working group (see informal document INF.60). After an exchange of views, the group decided to initially focus the discussion on data loggers and tracking devices for which clarity was most needed. This work will continue intersessionally.

Tribute to Mr. O. Kervella (Secretariat), Mr. J. Mayers (United Kingdom) and Ms. T.J. Ness (Norway)

101. Following the retirement of Mr. O. Kervella (see also paragraphs 7 and 8 of this report), the Sub-Committee expressed its deep appreciation and gratitude for his work, dedication and 35 years of service to the United Nations in issues relating to the transport of dangerous goods and management of chemicals, most of them as secretary to the Sub-Committee and its parent Committee. The Sub-Committee considered that his broad knowledge in these fields would be greatly missed and wished him every success in his new undertakings.

102. The Sub-Committee was also informed that Mr. J. Mairs (United Kingdom) and Ms. T.J. Ness (Norway) were attending a session of the Sub-Committee for the last time. The Sub-Committee wished Mr. J. Mairs a happy and long retirement and Ms. T.J. Ness all the best in her future endeavours.

XIV. Adoption of the report (agenda item 12)

103. The Sub-Committee adopted the report on its fifty-second session and its annexes on the basis of a draft prepared by the secretariat.